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Curriculum Design Orientations Preference Scale of Teachers: Validity and Reliability Study

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Abstract

The purpose of this study was to develop a valid and reliable scale for preferences of teachers in regard of their curriculum design orientations. Because there was no scale development study similar to this one in Turkey, it was considered as an urgent need to develop such a scale in the study. The sample of the research consisted of 300 elementary and high school teachers, working in Niğde province and its districts, selected according to cluster sampling method. In light of the scales obtained from the related literature and other information, a pool consisting of 35 items were formed by the researcher. Then, the first form of the scale was presented into the views of a group of field experts for content validity. In order to test the validity of the scale, the exploratory and confirmatory factor analyses were carried out in the research. A result of the exploratory factor analysis, the scale consisted of three factors: (i) subject-centred curriculum design orientation, (ii) student-centred learner-centred) curriculum design orientation, and (iii) problem-centred curriculum design orientation with 30 items. KMO value of the scale was found as 0.93 and Bartlett's test of sphericity was found as 3051.295/df=435 in the study. Besides, the factor loadings of the scale were found to be ranged from 0.81 to 0.45 and item-total correlation values were found between 0.71 and 0.49. Cronbach's Alpha reliability coefficient value was found as 0.94 and Spearman-Brown split-half correlation value was found as 0.91. It was seen that reliability coefficient values of the factors of in the scale ranged between 0.89 and 0.87 in the research. Also, it was understood that there were positive correlations amongst the factors of the scale. The confirmatory factor analysis was applied on the three-factor structure obtained from the scale's exploratory factor analysis on a group of 320 teachers, similar to the sample group of the study. As a result of the confirmatory factor analysis, it was understood that the obtained values [X2/df=604.02/402; GFI= 0.83; AGFI= 0.80; RMSEA= 0.05; CFI= 0.90; NFI= 0.77; NNFI= 0.89; RMR= 0.077; SRMR= 0.056], confirmed the three-factor structure of the scale. Thus, according to the results obtained in the research, it could be said that the scale developed in this study is a valid and reliable scale to be used both by elementary and high school teachers.

Key Words

Curriculum, Curriculum Design Orientations, Teachers, Scale Development.

Thoughts on the concept of curriculum began centuries ago. The roots of these ideas date back to Platon (4th century B.C.). However, the foundation of the curriculum is based on the philosophical movement of J. F. Herbart (1776-1848) which became popular towards the end of the 19th century. Although the concept of the curriculum has been used since 1820, "The Curriculum" written by F. Bobbitt is considered as the beginning of the curriculum field (Korkmaz, 2007). According to another view, the use of the concept of the curriculum is believed to be extending to soldiers of Rome of Julius Caesar in the 1st century, for competing racing cars in oval running track. In this process, the curriculum has been used for the "followed road" in terms of being used in education (Demirel, 2005; Ertürk, 1972; Sönmez, 2007).

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Saylor, Alexander and Lewis (1981, p. 8) define the concept of curriculum as a plan to be followed to help individuals acquire learning experiences, while Taba (1962, p. 11) refers to it as a learning plan. Ertürk (1972, p. 14) considers curriculum as a "yetişek" and defines it as the "whole of regular learning experiences". According to Varış (1978, p. 18), curriculum includes all the activities conducted by an educational institution for children, teenagers and adults for the purpose of accomplishment of the goals of both the National Education and related institutions. According to Demirel (2005, p. 4), curriculum is a mechanism of learning experiences provided for learners via in-school and out-of-school planned activities. A curriculum is developed for such purposes as establishing a good-quality education system either on national or international basis, training qualified human force to help develop the country and supporting the protection and development of social and cultural values (Özdemir, 2009). Varış regards curriculum as an operational concept and states the necessity to develop it constantly. In this respect, the first step in developing a curriculum is to design what it will include. Curriculum development experts should put forward this curriculum design before starting their curriculum development studies. In this sense, curriculum design could be regarded as the process of determining which elements to cover in the curriculum (Demirel).

Curriculum design constitutes the focal point of activities regarding curriculum development and evaluation. A curriculum prepared as appropriate to the principles of curriculum design becomes functional in practice (Erden, 2000). While preparing a curriculum design, the data constituting the basis of the decisions to be taken in the first phase are collected via the analysis of the needs of individuals, the society and the subject field (Tyler, 1950). Determining the priority of these data collection sources depends on the educational philosophy or model that the design is based on. For instance, if the design is centred on the subject field, then the subject field has the priority; if it is student-centred or experience-centred, then the individual has the priority; and if it is society-centred, then the data to be collected from the society are of great importance and priority (Erden). Curriculum designs are made up of basic elements that form the curriculum, and different designs occur when the differences regarding the relationships between these elements are revealed. The basic elements of a curriculum include *(i)* objectives, *(ii)* content (subject field), *(iii)* teaching-learning processes, and *(iv)* measurement-evaluation. Curriculum designs are formed by giving different weights to these elements. It is generally seen that amongst these elements, the biggest weight is given to the dimension of content (subject field). Some curriculum developers give weight to the dimension of teaching-learning processes or of measurement-evaluation. In a curriculum design focusing more on process evaluation, more importance is given to the organisation of learning experiences, while in a curriculum design focusing more on product evaluation, measurement techniques come into prominence (Demirel, 2005). For example, it is seen in recently-developed elementary school curricula that more weight is given to the element of teaching-learning processes.

Before developing a curriculum, first of all, it should be structured based on a certain design approach (Demirel, 2005; Henson, 2006; McNeil, 2006; Ornstein & Hunkins, 1993; Tanner & Tanner, 1995). The design constitutes one of the three dimensions of curriculum development, the other two being application and evaluation. In addition, design is also the most important element which puts forward the understanding and philosophy of the curriculum (Demirel). Curriculum design is, in a sense, an indicator of what kind of a structure the curriculum to be developed will have, which questions it will address, which behaviour and characteristics it will help individuals gain and which information, skills, understanding and attitudes individuals will acquire with the help of the curriculum (Özdemir, 2007). As can be seen, preparing a curriculum design does not mean merely gathering the curriculum elements. The design should have a structure which will allow helping individuals gain the desired behaviour, skills and attitudes (Gürol, 2006).

The primary question in curriculum design is related to what the curriculum will be based on: Will it be designed on the basis of the student, the field subject or the problem? (Korkmaz, 2007). In the related literature, curriculum design is explained in three categories. These orientations regarding curriculum design are: *(i)* subject-centred curriculum design orientation, *(ii)* student-centred (learner-centred) curriculum design orientation, and *(iii)* problem-centred curriculum design orientation (Ornstein & Hunkins, 1993).

Subject-Centred Curriculum Design Orientations

Subject-centred curriculum designs are those which are the oldest and most common curriculum designs. The fact that this approach is easy and well-known has made it widely accepted both

in our country and in the world (Büyükkaragöz, 1997). The reason is that a subject-centred curriculum is designed in connection with the traditional understanding and culture, and people find it easier to teach the content which has been traditionally approved for ages (Henson, 2006). This curriculum design focuses on courses and subjects in an organised manner. For example, such courses as mathematics, physics, chemistry and biology are designed as well-organised disciplines. In these design orientations, information is organised according to the disciplines, and the subjects organised within these disciplines constitute the basis of the curriculum (Saylor et al., 1981). These curriculum design orientations are based on such educational philosophies as perennialism and essentialism, which are reflections of idealistic and realistic philosophies onto education (Gutek, 1988; Sönmez, 2009). There are four main types of such design orientations: *(i)* Subject Design, *(ii)* Discipline Design, *(iii)* Wide Field Design, *(iv)* Process Design, and *(v)* Correlational Design (Çubukçu, 2008; Henson; Korkmaz, 2007; McNeil, 2006; Ornstein & Hunkins, 1993; Tanner & Tanner, 1995; Wiles & Bondi, 1993).

Student-Centred (Learner-Centred) Curriculum Design Orientations

The overall purpose of student-centred (learner-centred) design orientations is to have the child view and accept him or her as a whole. An important feature of these design orientations is the thought that learning can only be achieved with the learner's participation in learning. The student is in the centre of the curriculum design (Çubukçu, 2008). Student-centred design is an approach that takes individual differences into consideration (Büyükkaragöz, 1997). The student-centred design based on pragmatism as a basic philosophy and on progressivism as an educational movement (Gutek, 1988) gives particular importance to the needs and interests of the child and requires his or her active participation in the learning process. In the student-centred design, there is no previously-prepared curriculum. In general, students are involved in the process of curriculum development, and the curriculum is shaped according to their views (Marsh & Willis, 2007). There are four main types of such design: *(i)* Child-Centred Design, *(ii)* Experience-Centred Design, *(iii)* Romantic (Radical) Design, and *(iv)* Humanistic Design (Henson, 2006; Korkmaz, 2007; Marsh & Willis; McNeil, 2006; Tanner & Tanner, 1995; Wiles & Bondi, 1993).

Problem-Centred Curriculum Design Orientations

Problem-centred designs based on pragmatism as a basic philosophy and on progressivism and re-constructionism -an extension of progressivism- as an educational philosophy have been organised to strengthen cultural and traditional values and to indicate the needs of the society which have not been satisfied yet (Demirel, 2005). This approach centres the problems of the individual and of the society. The focal points of this design cover the permanence of social life, social problems, social values, living spaces and social structuring. Social problems are taken into consideration in line with students' interests, their abilities and their needs. The purpose of the curriculum designed according to the problems is to train individuals who have the necessary knowledge and skills to solve the important social problems (Çubukçu, 2008). The goals of this curriculum design are generally achieved in connection with social activities (Saylor, Alexander, & Lewis, 1981). There are three main types of such design orientations: *(i)* Living Conditions Design, *(ii)* Core Design, and *(iii)* Social Problems and Re-Constructionist Design (Demirel; Henson, 2006; Korkmaz, 2007; McNeil, 2006; Ornstein & Hunkins, 1993; Tanner & Tanner, 1995; Wiles & Bondi, 1993).

Consequently, organising a curriculum design is more than simply gathering curriculum elements. The design should have a structure that will help students acquire the desired behaviour, skills and attitudes (Demirel, 2005). On the other hand, the philosophy underlying curricula put into effect in a country – thus the curriculum design orientation – should be in line with the principle philosophy dominating the society. Everybody dealing with education should know well which philosophy is dominant in the society (Doğanay & Sarı, 2003). The reason is that if the educational philosophy of a curriculum and the philosophy dominating the society with the curriculum design orientation contradict with each other, it will not be possible at all to achieve the goals set within the scope of the curriculum. According to Doğanay (2011), it is important that especially experts who develop curricula as well as teachers who apply them should know well and adopt the national educational philosophy. In a sense, recognition of the philosophy dominant in the society determines which curriculum design to use in a curriculum. Thus, during the Republic period, the Turkish Education System was seemingly based on the pragmatic philosophy and on progressivism – a reflection of the pragmatic philosophy onto education. However, it was observed that in practice, there was the influence of such educational philosophies as essentialism and perennialism rath-

er than of progressivism (Sönmez, 2009). The reason was that the dominant philosophy in the society and the philosophy and approach of curricula did not agree with each other; as a result, this disagreement was reflected into practice in different ways. Thus, during the Republic period, in 1924, 1926, 1936, 1948, 1962, 1968 and in 1998, various changes were made in curricula in Turkey (Çelenk, Tertemiz, & Kalaycı, 2000). Finally, in our country, all elementary school curricula were revised with a new understanding in 2004 and put into effect in the academic year of 2005-2006 (Turan, 2006). It was stated in the curricula developed that the educational philosophy of progressivism -a reflection of the philosophy of pragmatism onto education- was taken as basis. In other words, the student-centred (learner-centred) curriculum design orientation constituted the basis of these curricula. However, these curricula became subject-centred in the course of time and gained the characteristics of a content-based (subject-centred) structure (Acat, 2010; Turan, 2010). Whichever educational philosophy or curriculum design orientation constitutes the basis of the curricula developed, these curricula should comply with the understandings of teachers who will apply them. Otherwise, it would be quite difficult to reflect these curricula into practice and sometimes impossible. According to Cheung and Ng (2000), if a teacher believes that a curriculum design is not valuable, it will then not be possible for that teacher to put the curriculum into practice on voluntary basis.

A number of studies conducted demonstrated that teachers' educational beliefs and the educational philosophy they have adopted influence their in-class behaviour, their teaching practices and their overall views about education (Karakuş, 2006; Klein, 1977; Livingston, McClain, & Despain, 1995; Quinlan, 1997; Wiles & Bondi, 1993; Wooley, Benjamin, & Wooley, 2004; Yılmaz, Altunkurt, & Çokluk, 2011). Similarly, curriculum design orientations reflecting the educational philosophy and educational beliefs are believed to shape in-class practices and teachers' behaviour. In theory, the curriculum design orientation constituting the basis of a curriculum reflects how in-class instructional activities and teachers' behaviour should be (Livingston et al., 1995). However, this would not be the case all the time. Thus, even when a curriculum is developed on the basis of a learner-centred design orientation yet if the teacher favours or adopts a subject-centred design orientation, he or she will reflect his or her own approach into the teaching processes in class. In the related literature, it is reported that teachers' beliefs regarding the curriculum and their in-class behaviour have a close relationship with their viewpoints regarding learning (Cronin-Jones, 1991; Crummey, 2007; Jenkins, 2009, Lumpe, Haney, & Czerniak, 1998). In other words, if the teacher has a negative attitude towards the curriculum design orientation, it does not seem possible for that curriculum to be reflected into the teaching processes in class (Cheung & Ng, 2000; Jenkins). All curriculum design orientations are based on an educational philosophy (Demirel, 2005; Korkmaz, 2007; McNeil, 2006; Ornstein & Hunkins, 1993). Therefore, curriculum design orientations not only reflect teachers' educational philosophies but also demonstrate which teaching methods and techniques they will apply in class, which instructional materials they will use and which assessment methods they will put into practice. As reported by Bay, Gündoğdu, Dilekçi, Ozan, and Özdemir (2011), there are a number of studies demonstrating that teachers' practices in class have a relationship with beliefs and orientations. Therefore, determining which curriculum design orientations teachers favour is considered to be important in terms of revealing their educational preferences and their viewpoints regarding teaching processes. In this respect, when the related literature is reviewed, it is seen that there are many studies conducted to determine the curriculum orientations favoured by teachers both on national basis (Bay et. al.; Eren, 2010) and on international basis (Ashour, Khasawneh, Abu-Alruz, & Alsharqawi, 2012; Cheung & Ng; Crummey; Foil, 2008; Horn, 2011; Jenkins; Reding, 2008; Van Driel, Bulte, & Verloop, 2008; Wang, Elicker, & McMullen, 2008). In all these studies conducted on national and international basis, it was seen that the "curriculum orientations inventory" developed by Cheung and Wong (2002) was used. Amongst the studies conducted on national basis, in the study carried out by Eren, the confirmatory analyses of the scale developed by Cheung and Wong were conducted. In addition, it should be remembered that adaptation studies could lead to different results in different cultures. Therefore, except for international comparisons, it would not always be appropriate to use the scales developed in different cultures. Thus, Hambleton and Patsula (1999) emphasised that preferring scale adaptation rather than scale development would not always be appropriate and stated that developing a new scale is both easier and more appropriate if there is no intercultural comparison. Although there are some scale development studies conducted abroad to determine teachers' curriculum orientations (Cheung & Wong), there is no study conducted in our country for the mere purpose of determining teachers' curriculum design orienta-

tions. In this respect, determining the curriculum design orientations favoured by teachers is considered to be important in terms of revealing teachers' in-class behaviour, their practices, their preferences and their expectations from a curriculum.

Method

Sample

The sample of the research consisted of 300 elementary and high school teachers selected according to cluster sampling method from three layer groups (high-middle-low socio-economic structure) (McMillan & Schumacher, 2006) of schools in 2011-2012 academic year in Niğde province. This kind of sampling method was adopted in the research, because this sampling method is believed to give important information in regard of the population (Büyüköztürk, Çakmak-Kılıç, Akgün, Karadeniz, & Demirel, 2008). According to Kline (1994) and Şencan (2005), a sample group of 100-200 subjects is suitable for scale development so that the quality of the sample group can be stated to be suitable for the study. In the research, 50% (n=160) of the teachers were elementary school teachers and 50% (n=160) of the teachers were high school teachers. 42.66% (n=128) of the teachers were females, 57.33% (n=172) of them were males. 22.33% (n=67) of the teachers had 1-5, 20.33% (n=79) had 6-10, 19% (n=57) had 11-15, 20.33% (n=61) had 16-20, and 12% (n=36) had 20 and above years of occupational experience. 13% (n=39) of the teachers had senior high school, 82.33 (n=247) had undergraduate and 4.66% (n=14) had postgraduate level of education. On the other hand, in order to make the confirmatory factor analysis, the scale was applied on a group of 320 teachers, representing similar characteristics of the sample group in the research.

Development of the Scale

In light of the scales obtained from the related literature review and other information, a pool consisting of 35 items was formed by the researcher (Büyükkaragöz, 1997; Çubukçu, 2008; Demirel, 2005; Erden, 2000; Ertürk, 1972; Henson, 2006; Korkmaz, 2007; Marsh & Willis, 2007; McNeil, 2006; Ornstein & Hunkins, 1993; Saylor et al., 1981; Taba, 1962; Tyler, 1950; Tanner & Tanner, 1995; Varış, 1978). Then, the first form of the scale was presented into the views of a group of field and linguistic experts for language and intelligibility of the expressions. Necessary corrections were made on the scale. The scale, then, was finalised as a result of the suggestions of the related group in the research. The five Likert type (From "Totally Disagree: 1" to "Totally Agree: 5") 35-item pilot form was applied on 300 teachers. For the construct validity of the scale, the exploratory factor analysis based on the principal component analysis method was applied, and then the confirmatory factor analysis was used to determine whether the defined construct was valid (Büyüköztürk, 2007; Çokluk, Şekercioğlu, & Büyüköztürk, 2010; Kline, 1994; Tabashnick & Fidell, 2001).

In the exploratory factor analysis, 0.40 was accepted as the factor loading lowest limit in determining whether the items were included in the scale. There are different views about the acceptance level of the lowest factor loading in the related literature (Büyüköztürk, 2007; Diekhoff, 1992; Ferguson & Takane, 1989; Fraenkel & Wallen, 2000; Murphy & Davidshofer, 1991; Reuterberg & Gustafsson, 1992). According to the related literature, a factor loading is considered as "excellent" if it is 0.71 (which explains 50% of the variance) (Diekhoff), it is considered as "pretty good" if it is 0.63 (which explains 40% of the variance), as "good" if it is 0.55 (which explains 30% of the variance), as "average" if it is 0.45 (which explains 20% of the variance), and "poor" if it is 0.32 (which explains 10% of the variance) (Tabaschinck & Fidell, 2001). Therefore, 0.40 factor loading was accepted as the lowest loading limit in the analysis of this research (Ferguson & Takane).

As a result of the confirmatory factor analysis, various goodness of fit indices are obtained (Brown, 2006; Çokluk et al., 2010; Jöroskog & Sörbom, 1993; Kline, 2005; Marsh, Balla, & McDonald, 1988; Schumacher & Lomax, 1996; Tabaschinck & Fidell, 2001; Thomson, 2004). In the study, as a result of the confirmatory factor analysis of the scale, X^2/df ratio, GFI, AGFI, RMSEA, RMR, SRMR, CFI, NFI and NNFI goodness of fit indices were evaluated. To evaluate the goodness of fit of the defined model, the primary fit indices were determined: The ratio of the chi-square statistic to the degrees of freedom (X^2/df) should be less than 2, the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), the Normed (NFI) and the Non-normed Fit Index (NNFI) should exceed 0.90, the Root Mean Square Error of Approximation (RMSEA) should be less than 0.05, with values less than 0.06 representing good fit, and the Standardised Root Mean Squared Residual (SRMR) should not exceed 0.05 (Brown; Çokluk et al.; Jöroskog & Sörbom; Kline, 2005; Schumacher & Lomax; Tabaschinck & Fidell; Thomson). After the confirmatory factor analysis of the scale, Cronbach's

Alpha internal consistency and Spearman-Brown correlation coefficients were calculated for reliability.

Data Analysis

In order to carry out the validity and reliability studies of the scale, the exploratory and confirmatory factor analyses were made. The studies regarding the exploratory factor analysis were made through SPSS 17.0 (Statistical Package for Social Sciences) and the studies in relation with the confirmatory factor analysis were made through LISREL 8.51 (Linear Structural Relation Statistics Package Program).

Results

In this part of the research, the validity and reliability analyses of the scale were presented. Firstly, Kaiser-Meyer-Olkin (KMO) sampling adequacy and Bartlett's test of sphericity values were examined in order to test the eligibility of the data obtained for factor analysis. KMO is used as a criterion of factor analysis (Büyüköztürk, 2007; Fraenkel & Wallen, 2000; Kline, 1994; Murphy & Davidshofer, 1991). If KMO value is lower than 0.50, the exploratory factor analysis cannot be applied (Büyüköztürk, 2007; Fraenkel & Wallen; Kline, 1994). KMO value is evaluated by specific ranges: *(i)* "bad" for the range of 0.50-0.60, *(ii)* "poor" for the range of 0.60-0.70, *(iii)* "moderate" for the range of 0.70-0.80, *(iv)* "good" for the range of 0.80-0.90, and *(v)* "excellent" for the range of 0.90 and above (Büyüköztürk, 2007; Fraenkel & Wallen; Kline, 1994; Murphy & Davidshofer). In this study, KMO value was calculated as 0.93, which means "excellent" (Fraenkel & Wallen; Kline, 1994; Murphy & Davidshofer; Reuterberg & Gustafsson, 1992). Bartlett's test of sphericity value was found as significant [X^2=3051.295/*df*=435, p<0.000]. As a result of these tests, it was decided that the exploratory factor analysis could be applied on the data set of the scale.

Findings of the Exploratory Factor Analysis

As a result of the exploratory factor analysis, it was seen that the scale had a structure of three factors with 30 items. Whereas, 5 items in the pilot study form were calculated to be under the adopted lowest factor loading limit (0.40) so that these items were removed from the scale in the study. Thus, the scale was understood to be consisted of 30 items. In regard of the first factor, Subject-Centred Curriculum Design Orientation consisted of 10 items and the factor loadings rotated by varimax ranged from 0.58 to 0.72. Explained variance of this factor was calculated as 19.978%. In terms of the second factor, Student-Centred (Learner-Centred) Curriculum Design Orientation consisted of 10 items and the factor loadings rotated by varimax ranged from 0.52 to 0.75. Explained variance of this factor was calculated as 18.324%. Lastly, the third factor, Problem-Centred Curriculum Design Orientation, consisted of 10 items and the factor loadings rotated by varimax ranged from 0.45 to 0.81. Explained variance of this factor was calculated as 13.709% in the study. The total explained variance of the scale was found as 52.011% in the research. As Kline (1994) states, variance ratios ranging from 40% to 60% are accepted as sufficient in social sciences. Besides, in order to test the structure with three factors of the scale, Cattel's Scree test (Kline, 1994) was applied on the data. As a result of the Scree test result, it was seen that the scale consisted of three factors. As looked at the Scree test graphic, it was seen that there were three important factors. The next factors at this point are both small and the same in regard of their contribution to the total variance (Fabrigar, Wegener, MacCallum, & Strahan, 1999). On the other hand, correlations amongst three factors of the scale were analysed via computing bivariate correlation. According to the correlation analysis carried out, it was seen that there are positive correlations amongst the factors (p<0.01) ranging between 0.70 and 0.72 in the study.

Findings of the Validity and Reliability Analyses

The items of the scale were analysed via computing item-total correlations for each factor and the independent samples t test values were computed to compare both the item and factor scores of upper and lower 27% groups. All item-total correlation coefficients fell within the range of 0.71 to 0.49 in the research. Likewise, all independent samples t test values for the difference between the scores of upper and lower 27% of the items and factors found out to be significant (p<0.01). When Cronbach's Alpha internal consistency coefficient calculated for the scale, the following coefficients were seen to be obtained for factors: *(i)* "Subject-Centred Curriculum Design Orientation: 0.89", *(ii)* "Student-Centred (Learner-Centred) Curriculum Design Orientation: 0.89", and *(iii)* "Problem-Centred Curriculum Design Orientation: 0.87" in the research. Also, the general reliability coefficient value for the scale was found as 0.94 in the study. According to Cronbach (1990), reliability coefficients in reliability studies values between 0.60 and 0.70 are accepted

as sufficient. However, it is generally accepted that the reliability coefficient must be 0.70 in a lesser extent (Anderson, 1988; Kline, 1994; Peers, 1996). When Spearman-Brown correlation coefficient of the scale was examined, it was understood that the correlation coefficient of the two forms of the scale in result of Spearman-Brown correlation analysis was 0.91 in the study. In the related literature, values above 0.80 are accepted as good for reliability (Büyüköztürk, 2002). Spearman-Brown correlation coefficient is a good method to be used when it is hard to apply the test for two times or prepare two equivalent forms of the similar test (Özen, Güçaltı, & Kandemir, 2006). Hence, in regard of the accounted value for Spearman-Brown correlation analysis, it was understood that 0.91 value can be explained as "excellent" (Büyüköztürk, 2007; Fraenkel & Wallen, 2000; Kline, 1994; Murphy & Davidshofer, 1991; Reuterberg & Gustafsson, 1992).

Findings of the Confirmatory Factor Analysis

Confirmatory factor analysis was applied to the three-factor structure obtained from the scale's exploratory factor analysis on a group of 320 teachers similar to the sample group of this study. On examining the compatibility index results of the constructed equation model, the model-data compatibility was found out to be high enough. As a result of path analysis, $\chi 2/df$ ratio was found as 1.50 ($\chi 2/df$=604.02/402). In the study, GFI value was found out as 0.83 and AGFI vale was found as 0.80 so that they can be perceived as sufficient. In this research, RMSEA value was found as 0.05. Besides, RMR value was found as 0.056 and SRMR value was found as 0.077 in the study. In this study, CFI value was found out as 0.90. Lastly, NFI value was 0.77 and NNFI value was found as 0.89 in this study. In this regard, on examining the compatibility index results of the constructed structural equation model, the model-data compatibility was found out to be high enough in the research. According to the findings obtained in the research, it was found that $\chi 2/df$ ratio was 1.50 ($\chi 2/df$=604.02/402) in the research. In the study, GFI value was found out 0.83 so that it can be perceived as sufficient. In this research, RMSEA value was found as 0.05 so that it is considered as an excellent goodness of fit. RMR value was found out to be 0.056 and SRMR value was found as 0.077 in the study. In this research, CFI value was found out as 0.90 On the other hand, NFI value was found as 0.77 and NNFI value was found as 0.89 in the research. Hence, these values can be perceived as sufficient goodness of fit (Brown, 2006; Çokluk et al., 2010; Hooper, Coughlan, & Mullen, 2008; Jöreskog & Sörbom, 1993; Schumacher & Lomax, 1996; Sümer, 2000; Şimşek, 2007; Tabashnick & Fidell, 2001; Thompson, 2004; Yılmaz & Çelik, 2009).

Discussion

The purpose of this study was to develop a valid and reliable scale for preferences of teachers in regard of their curriculum design orientations. According to the findings obtained in the research, KMO value was calculated as 0.93, which means "excellent" (Fraenkel & Wallen, 2000; Kline, 1994; Murphy & Davidshofer, 1991; Reuterberg & Gustafsson, 1992). Bartlett's test of sphericity was found as significant [X^2=3051.295/*df*=435, p<0.000]. As a result of these tests, it was decided that the exploratory factor analysis could be applied. As a result of the exploratory factor analysis, it was seen that the scale had a structure of three factors with 30 items. Whereas, 5 items in the pilot study form were calculated to be under the lowest factor loading limit (0.40) in the study. Thus, the scale consisted of 30 items. In regard of the first factor, Subject-Centred Curriculum Design Orientation consisted of 10 items and the factor loadings rotated by varimax ranged from 0.58 to 0.72. Explained variance of this factor was calculated as 19.978%. In terms of the second factor, Student-Centred (Learner-Centred) Curriculum Design Orientation consisted of 10 items and the factor loadings rotated by varimax ranged from 0.52 to 0.75. Explained variance of this factor was calculated as 18.324%. Lastly, the third factor, Problem-Centred Curriculum Design Orientation, consisted of 10 items and the factor loadings rotated by varimax ranged from 0.45 to 0.81. Explained variance of this factor was calculated as 13.709% in the study. The total explained variance of the scale was found as 52.011% in the research. As Kline (1994) and Scherer (1988) state, variance ratios ranging from 40% to 60% are accepted as sufficient in social sciences. Because, it is not easy to reach a high proportion of variance in social sciences (Tavşancıl, 2005). On the other hand, according to the correlation analysis carried out, it was seen that there are positive correlations amongst the factors (p<0.01) ranging between 0.70 and 0.72 in the study.

The items of the scale were analysed via computing item-total correlations for each factor and the independent samples *t* test values were computed to compare both the item and factor scores of upper and lower 27% groups. All item-total correlation coefficients fell within the range of 0.71 to 0.49 in the research. Likewise, all independent samples *t*

test values for the difference between the scores of upper and lower 27% of the items and factors found out to be significant (p<0.01). When Cronbach's Alpha internal consistency coefficients calculated for the scale, the following coefficients were seen to be obtained: "Subject-Centred Curriculum Design Orientation: 0.89", "Student-Centred (Learner-Centred) Curriculum Design Orientation: 0.89", and "Problem-Centred Curriculum Design Orientation: 0.87" in the research. According to Cronbach (1990), reliability coefficients in reliability studies values between 0.60 and 0.70 are accepted as sufficient. However, it is generally accepted that the reliability coefficient must be 0.70 in a lesser extent (Anderson, 1988; Kline, 1994; Peers, 1996). When Spearmen-Brown correlation coefficient of the scale was examined, it was understood that the correlation coefficient of the two forms of the scale in result of Spearman-Brown correlation analysis, was 0.91 in the study. In the related literature, values above 0.80 are accepted as good for reliability (Büyüköztürk, 2002). Spearman-Brown correlation coefficient is a good method to be used when it is hard to apply the test for two times or prepare two equivalent forms of the similar test (Özen et al., 2006). Hence, the accounted value for Spearman-Brown correlation analysis, it was understood that 0.91 value can be explained as "excellent" (Büyüköztürk, 2007; Fraenkel & Wallen, 2000; Kline, 1994; Murphy & Davidshofer, 1991; Reuterberg & Gustafsson, 1992). According to Şimşek (2007), despite a scale gives very good results in the end of the exploratory factor analysis, it may not give the same results in the end of the confirmatory factor analysis. Hence, it was considered the confirmatory factor analysis could be applied on the three-factor structure of the scale as well as the exploratory factor analysis.

Confirmatory factor analysis was applied to the three-factor construct obtained from the scale's exploratory factor analysis on a group of 320 teachers similar to the sample group of this study. On examining the compatibility index results of the constructed equation model, the model-data compatibility was found out to be high enough. As a result of path analysis, $\chi 2/df$ ratio was 1.50 ($\chi 2/df$=604.02/402). In the study, GFI value was found out as 0.83 and AGFI value was found as 0.80 so that they can be perceived as sufficient. In this research, RMSEA value was found as 0.05 so that it is considered as an excellent goodness of fit. Besides, RMR value was found as 0.056 and SRMR value was found as 0.077 in the study. In this study, CFI value was found out as 0.90. Lastly, NFI value was 0.77 and NNFI value was found as 0.89 in this study. In this regard, on examining the compatibility index results of the constructed structural equation model, it can be said that the model-data compatibility was high enough in the research. According to the findings obtained in the research, it was found that $\chi 2/df$ ratio was 1.50 ($\chi 2/df$=604.02/402) in the research. It is stated that a ratio equal to or lower than 2.5 in small samples (Kline, 2005) and a ratio equal to greater than 3 in large samples correspond to excellent goodness of fit in the related literature (Sümer, 2000). Besides this, it is stated that GFI and AGFI indices equal to 1 means excellent goodness of fit in the literature (Schumacher & Lomax, 1996). In the study, GFI value was found out 0.83 so that it can be perceived as sufficient. RMSEA value equal to or lower than 0.05 means excellent goodness of fit (Brown, 2006; Çokluk et al., 2010; Hooper et al., 2008; Jöreskog & Sörbom, 1993; Schumacher & Lomax, 1996; Şimşek, 2007; Yılmaz & Çelik, 2009). In this research, RMSEA value was found as 0.05 so that it is considered as an excellent goodness of fit. RMR and SRMR values are lower than 0.05 displays perfect model-data compatibility (Brown). In the study, RMR value was found out to be 0.056 and SRMR value was found as 0.077 so that it can be stated that they are the indicators of sufficient goodness of fit. CFI value equal to or greater than 0.95 means excellent goodness of fit (Thompson, 2004). In this study, CFI value was found out as 0.90 so that it can be considered as sufficient goodness of fit. NFI and NNFI values equal to or greater than 0.95 mean excellent goodness of fit in the related literature (Brown; Schumacher & Lomax; Tabashnick & Fidell, 2001). Besides, NFI value was found as 0.77 and NNFI value was found as 0.89 in the research. Hence, these values can be perceived as sufficient goodness of fit (Sümer, 2000).

When the related literature is reviewed, it is seen that there is a scale development study (Cheung & Wong, 2002) and there are also studies (Ashour et al., 2012; Bay et al., 2011; Cheung & Ng, 2000; Crummey, 2007; Eren, 2010; Foil, 2008; Horn, 2011; Jenkins, 2009; Reding, 2008; Van Driel et al., 2008; Wang et al., 2008) carried out using the scale. The mutual trait of these studies is that all of these studies were carried out using "curriculum orientations scale", developed by Cheung and Wong (2002) in the literature. Besides, it can be stated that the same scale developed by Cheung and Wong was used both in Turkey and abroad. Hence, it is observed that there is no scale development study determining teachers' curriculum orientations in the related literature. However, it is understood that there are some studies on the adaptation of the scale devel-

oped by Cheung and Wong into the Turkish language (Bay et al.; Eren). In an adaptation study of the scale developed by Cheung and Wong, Eren reached psychometric qualities similar with the original one. Thus, it was understood that the scale developed by Cheung and Wong had similar characteristics with its adaptation studies carried out in different countries such as Hong Kong, America, and Turkey respectively. However, it should be remembered that adaptation studies could lead to different results in different cultures. Therefore, except for international comparisons, it would not always be appropriate to use the scales developed in different cultures. Thus, Hambleton and Patsula (1999) emphasised that preferring scale adaptation rather than scale development would not always be appropriate and stated that developing a new scale is both easier and more appropriate if there is no intercultural comparison. In this sense, although it is seen there is a scale development study determining teachers' curriculum orientations in abroad in the related (Cheung & Wong), it could not seen any scale development study in relation with teachers' curriculum orientations in the Turkish culture. The scale, "Curriculum design orientations preference of teachers" developed in this study consisted of three factors: *(i)* subject-centred curriculum design orientation, *(ii)* student-centred learner-centred) curriculum design orientation, and *(iii)* problem-centred curriculum design orientation. Although there are similarities between the characteristics of factors between the scale developed by Cheung and Wong and the scale developed in this study. The scale, developed by Cheung and Wong has five distinct factors (academic beliefs, cognitive process, social re-constructivist, humanistic and technology), but the scale developed in this study has three factors. Hence, despite the scale developed by Cheung and Wong has been found similar psychometric similarities with the scale developed in this study, different results in relation with various cultures in scales developed in different countries may come into existence. In light of the studies obtained in the related literature, it was observed that there are no studies similar to the scale developed in this research both in abroad and in Turkey. Therefore, the scale developed in this study can be stated to be original, unique and valuable to use in determining teachers' curriculum design orientations preferences.

In terms of the findings related with the validity and reliability studies of "teachers' curriculum design orientations preference scale", it is suggested that this scale should be used to determine and evaluate teachers' curriculum design orientations. When teachers' beliefs, views, and orientations and the curriculum developed in a country are not integrated, it is very bad or not possible that teachers adopt the curriculum prepared in a country. In the end of this process, teachers may front to different classroom applications. In this regard, it can be stated that the scale developed in this study fills an important space in the related literature. On the other hand, the scale developed in this study can be adapted into curriculum experts and school principals, and then the psychometric characteristics of the scale can be tested on these groups. Besides, it is seen very crucial that a scale development study be carried out on the role of teachers in relation to the curriculum design orientations. This scale development study was carried out with a limited sample group respectively. Hence, it is suggested that further studies in terms of the confirmatory factor analysis should be carried out in large sample groups.

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Ek 1.

Öğretmenlerin Eğitim Programı Tasarım Yaklaşımı Tercih Ölçeği

No	*Maddeler*	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
1	Derste çoğunlukla problem çözme yöntemi kullanılmalıdır.					
2	Derste öğretmenden daha ziyade öğrenciler aktif olmalıdır.					
3	Derste, öğrencinin ilgi, ihtiyaç ve beklentileri dikkate alınmalıdır.					
4	Okul, demokratik süreçlerin yaşatıldığı bir yer olmalıdır.					
5	Okul, günün önemli bir bölümünü çok yönlü çalışmayı ve disiplinlerarası bağlantılar kurmayı gerçekleştirecek şekilde problematik çalışmalara ayırmalıdır.					
6	Programlarda, eğitim durumları ögesi daha fazla ön plana çıkarılmalıdır.					
7	Derste, önemli olan şey öğrencilerin bilgiyi oluşturmaları ve yaşam durumlarına transfer etmeleridir.					
8	Öğrencinin kendi gözlemleri ve yaşantısıyla öğrenme çabası içine girmesi önemlidir.					
9	Derste bireysel çalışmalardan daha ziyade işbirlikli çalışmalara yer verilmesi önemlidir.					
10	Okullarda, tüm öğrencilerin öğrenmesi gereken ortak öğrenme tecrübeleri temele alınmalıdır.					
11	Programlar, bireysel farklılıkları gözeten bir şekilde düzenlenmelidir.					
12	Okul, hataya hazırlık yeri olmaktan öte, hayatın bizzat kendisi olmalıdır.					
13	Derslerde, toplum gereksinim ve sorunları ele alınmalıdır.					
14	Derste, konuların öğrenilmesi önemli bir yer tutmalıdır.					
15	Programlar, değişmeyen evrensel bilgiye göre düzenlenmelidir.					
16	Programlarda, yaşama ilişkin gerçek sorunlar yer almalıdır.					
17	Derste önemli olan şey bilginin aktarılmasıdır.					
18	Derste, grup çalışmalarından daha ziyade bireysel çalışmalara yer verilmesi önemlidir.					
19	Derslerde öğrenciler sorun çözme sürecini kullanmaya özendirilmelidir.					
20	Derslerde, her konu için ayrı ayrı öğrenme yolu düzenlemek yerine, tüm konular için ortak bir öğrenme yolu ön plana çıkarılmalıdır.					
21	Derse öğrencilerin ilgi ve isteklerini yansıtmanın gereği yoktur.					
22	Okulda, öğrencilerin işbirliği yaparak toplumsal sorunlara çözümler bulması özendirilmelidir.					
23	Öğrenciler bilgileri alıcı ve ezberleyicidirler.					
24	Öğrencilerin kendilerini gerçekleştirebilecekleri, baskı ve zorlamanın olmadığı eğitim ortamları önemlidir.					
25	Öğrencilerin, bilginin farklı dallarında uzmanlaşması önemlidir.					
26	Okullarda, sosyal değerlerin öğrencilere kazandırılması çok önemlidir.					
27	Toplumsal değişmede okullar ve eğitim kritik bir role sahip bulunmaktadır.					
28	Derste, öğrencilerden daha ziyade öğretmen aktif olmalıdır.					
29	Okulda öğrenciler, gerçek yaşam problemlerine yönelik genelleme becerisi kazandırılmalıdır.					
30	Programlarda, içerik ögesi daha fazla ön plana çıkarılmalıdır.					